

Features

- RoHS compliant*
- Low profile
- Low power loss, high efficiency
- UL 94V-0 classification

Applications

- Switch Mode Power Supplies
- Portable equipment batteries
- High frequency rectification
- DC/DC Converters
- Telecommunications

CD214B-B3xR Series Schottky Barrier Rectifier Chip Diode

General Information

Portable communications, computing and video equipment manufacturers are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Schottky Rectifier Diodes for rectification applications, in a compact chip package compatible with DO-214AA (SMB) size format. The Schottky Rectifier Diodes offer a forward current of 3 A with a choice of repetitive peak reverse voltage of 20 V up to 100 V.



Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CD214B-				Unit
		B320R	B340R	B360R	B3100R	
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	20	40	60	100	V
Maximum Average Forward Current	I _{F(AV)}	3				A
Maximum Peak Forward Surge Current (8.3 ms Single Half Sine-Wave)	I _{FSM}	80				A
Operating Junction Temperature Range	T _{OPR}	-55 to +125		-55 to +150		°C
Storage Temperature Range	T _{STG}	-55 to +150				°C

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Condition or Model	Min.	Typ.	Max.	Unit	
Maximum Instantaneous Forward Voltage (NOTE 1)	V _F	I _F = 1 A	CD214B-B320R		0.40		V
			CD214B-B340R				
			CD214B-B360R		0.48		
		I _F = 3 A	CD214B-B3100R		0.58		
			CD214B-B320R		0.48	0.50	
			CD214B-B340R		0.65	0.70	
DC Reverse Current	I _R	V _R = V _{RRM}		0.04	0.50	mA	
Typical Junction Capacitance	C _J	V _R = 4 V, f = 1.0 MHz		180		pF	
Typical Thermal Resistance (NOTE 2)	Junction to Ambient	R _{θJA}		55		°C/W	
	Junction to Lead	R _{θJL}		17			

NOTES:

- (1) Pulse width 300 microsecond, 1 % duty cycle.
- (2) Mounted on PCB with 5.0 x 5.0 mm (0.2 x 0.2 inch) copper pad areas.

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

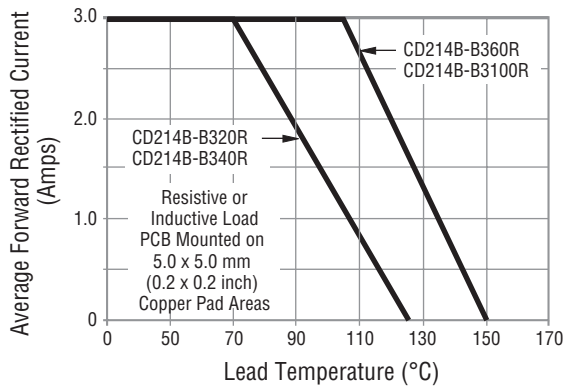
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

CD214B-B3xR Series Schottky Barrier Rectifier Chip Diode

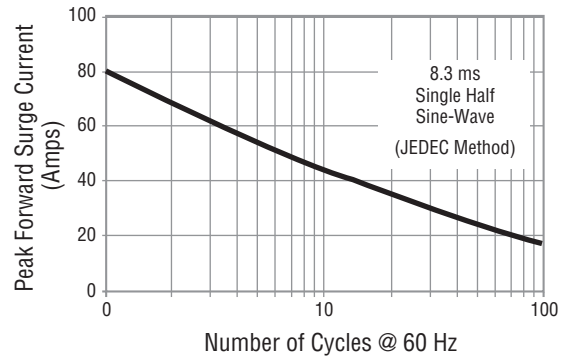
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Performance Graphs

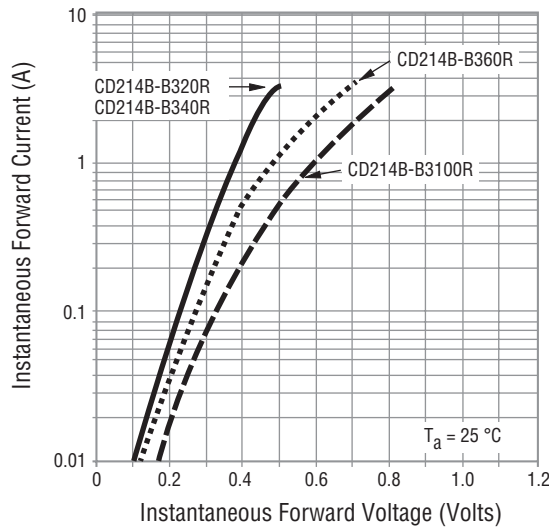
Forward Current Derating Curve



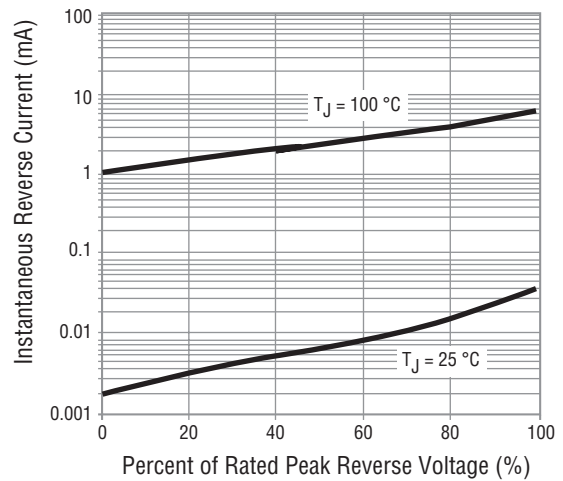
Max. Peak Forward Surge Current



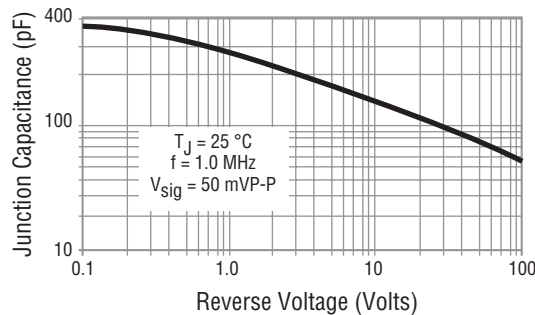
Typical Instantaneous Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



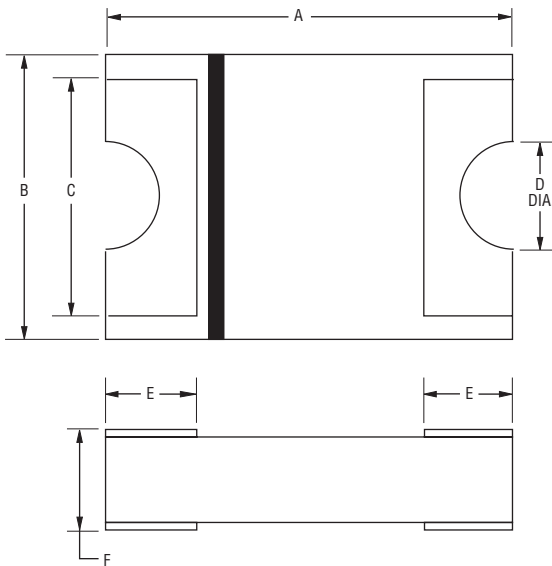
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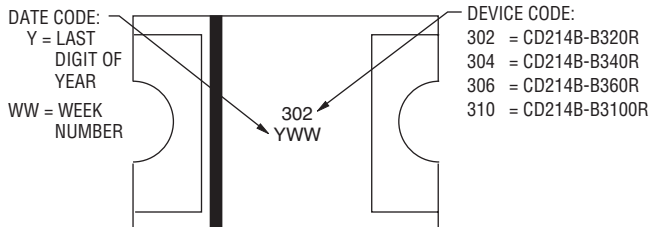
Product Dimensions



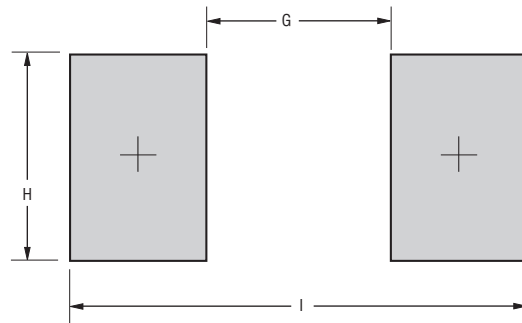
Dimension	CD214B-B3 Series
A	$\frac{5.20 \pm 0.10}{(0.205 \pm 0.004)}$
B	$\frac{3.60 \pm 0.10}{(0.142 \pm 0.004)}$
C	$\frac{3.01}{(0.119)}$ TYP.
D (Dia.)	$\frac{0.695 \pm 0.015}{(0.027 \pm 0.001)}$
E	$\frac{1.15 \pm 0.1}{(0.045 \pm 0.004)}$
F	$\frac{1.10 \pm 0.15}{(0.043 \pm 0.006)}$

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Typical Part Marking



Recommended Pad Layout



Dimension	CD214B-B3 Series
G	$\frac{2.65}{(0.104)}$ MAX.
H	$\frac{3.00}{(0.118)}$ MIN.
I	$\frac{6.65}{(0.262)}$ REF.

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Environmental Specifications

Moisture Sensitivity Level 1
 ESD Classification (HBM) 3B

How to Order

CD 214B - B 3 20 R

Common Code _____
 CD = Chip Diode

Package _____
 214B = SMB/DO-214AA Compatible

Model _____
 B = Schottky Barrier Series

Maximum Average Forward Rectified Current _____
 3 = 3 A

Maximum Repetitive Peak Reverse Voltage _____
 20 = 20 V
 40 = 40 V
 60 = 60 V
 100 = 100 V

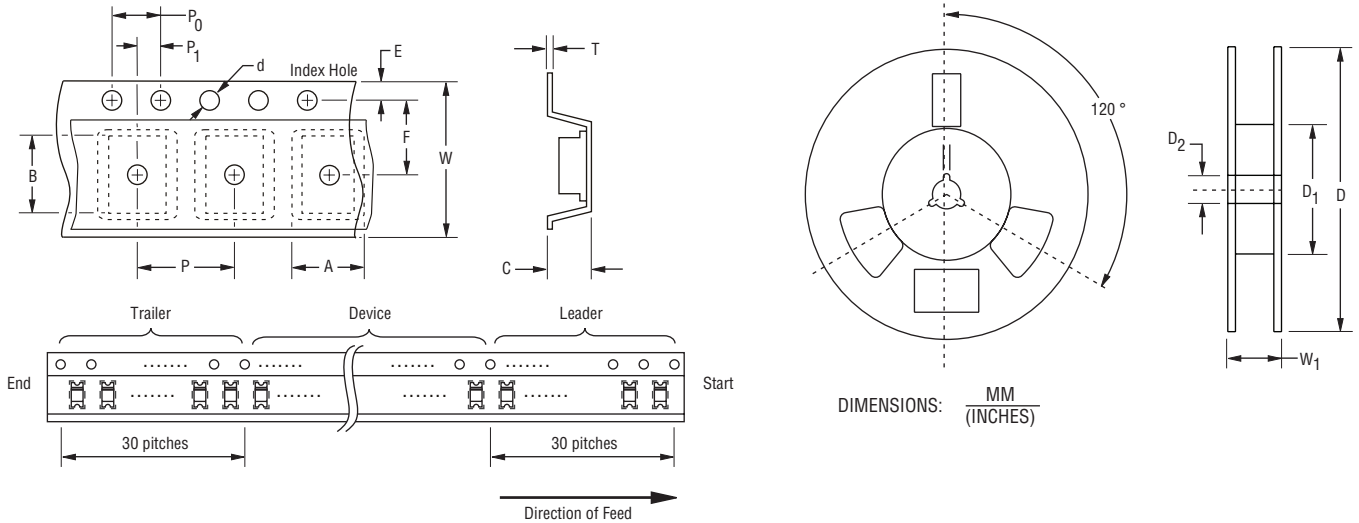
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Packaging Information

The product is dispensed in tape and reel format (see diagram below).



Item	Symbol	CD214B-B3 Series
Carrier Width	A	$\frac{3.70 \pm 0.10}{(0.146 \pm 0.004)}$
Carrier Length	B	$\frac{5.40 \pm 0.10}{(0.213 \pm 0.004)}$
Carrier Depth	C	$\frac{1.65 \pm 0.10}{(0.065 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.50 \pm 0.10}{(0.059 \pm 0.004)}$
Reel Outside Diameter	D	$\frac{330 \pm 2.0}{(12.992 \pm 0.079)}$
Reel Inner Diameter	D ₁	$\frac{50.0}{(1.969)}$ MIN.
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.50}{(0.512 \pm 0.020)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$
Punch Hole Position	F	$\frac{5.50 \pm 0.05}{(0.217 \pm 0.002)}$
Punch Hole Pitch	P	$\frac{8.00 \pm 0.10}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$
Overall Tape Thickness	T	$\frac{0.40}{(0.016)}$ MAX.
Tape Width	W	$\frac{12.00 \pm 0.30}{(0.472 \pm 0.012)}$
Reel Width	W ₁	$\frac{18.7}{(0.736)}$ MAX.
Quantity per Reel	--	5,000

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